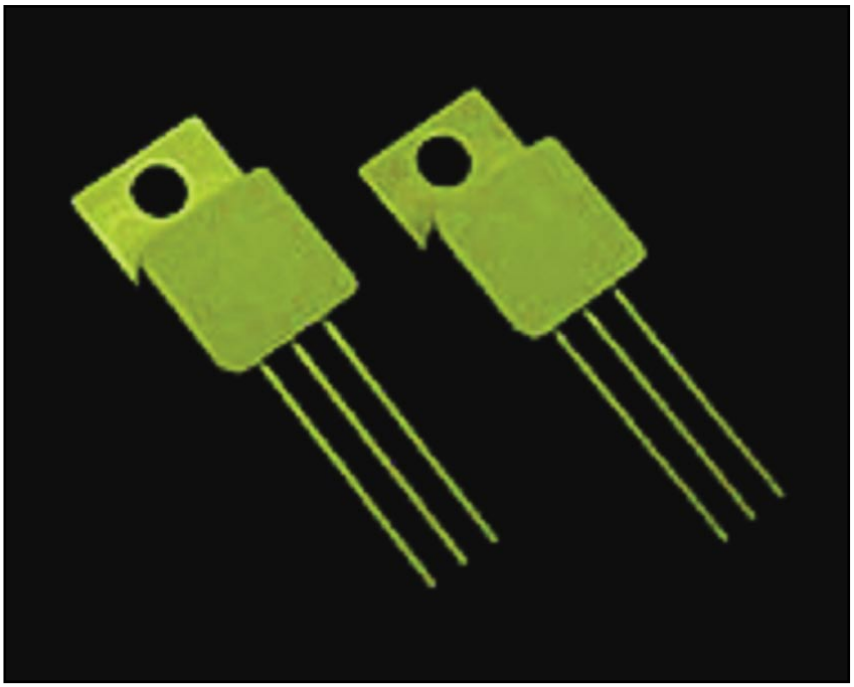
Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

AFRL TRANSISTOR TECHNOLOGY RESULTS IN COMMERCIAL PRODUCT DEVELOPMENT



AFRL developed junction field-effect transistor (JFET) switching devices for use in high-temperature operational environments. AFRL received requests from potential commercial users to evaluate JFET applications ranging from drill head motors for oil exploration to various aerospace uses.

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Accomplishment

AFRL and industry partner SemiSouth Laboratories, Inc., achieved a milestone in transistor technology and product development. They developed switching devices known as Harsh-Environment, Low-Loss Field-Effect Transistors (HEL2FET™), which offer electrical component manufacturers a line of switching devices with potential applications for motor drives, converters/inverters, and other electrical power equipment that has high-temperature operational requirements. The Air Force also has several power system requirements that this technology can satisfy, including electromechanical actuator motor drives to operate flight control surfaces, motor drives for fuel pumps, power modules, solid-state circuit breakers, radiation-tolerant power management and distribution components for space platforms, and integrated radar power supplies.

Background

In conducting power-related research, development, and technology transition for the military services, Department of Defense agencies, and industry, AFRL provides the essential foundation for technology development to support military systems acquisition and commercial applications.

Propulsion
Emerging Technologies

Additional Information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (05-PR-09)